ORIGINAL ARTICLE

MOTHERS AND HEALTH PROMOTION: CLOSING THE GAP FOR 100% MEASLES IMMUNIZATION IN NORTH VIETNAM

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Abstract

Objectives: This study aims to develop a better understanding of mothers' knowledge, understanding, and attitude towards children's measles immunization and explore the relationship between mothers' understanding of measles immunization and health promotion programs in North Vietnam. **Methods:** Semi-structured interviews were conducted with 15 mothers of children aged 1 or 6 years old between 2006 and 2010 in two provinces in North Vietnam. Ten interviews were transcribed and analysed to explore themes while other five interviews were cross-referenced for congruency. Among the ten mothers whose interviews were analysed, there were five mothers whose children received the full measles immunization schedule (two doses) and five mothers whose children received one or none of measles vaccination. **Results:** Mothers had different levels of understanding and a strong positive attitude towards measles immunization. Mothers considered health officers at the commune health centres who played an important role in the promotion of measles immunization, as the main source of information. The relationship between the mother's understanding about measles immunization and health promotion programs was found to be both positive and negative. **Conclusion:** Mothers whose children received the full measles immunization schedule paid more attention to measles immunization and health promotion programs compared with mothers whose children received one or none of measles vaccination. Mothers' misunderstanding about the measles immunization schedule was the main reason for choosing not to receive the measles immunizations. These findings help to improve communication with mothers about measles immunization and close the gap for 100% measles immunization in North Vietnam.

Keywords: Measles Immunization, Health Promotion Programs, Mothers' Knowledge, Understanding and Attitude, Qualitative Research
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Introduction

Measles vaccine is a safe and cost-effective way to prevent measles [1]. The measles vaccine is estimated to have reduced global measles mortality by 78% during 2000 – 2008 [2]. In Vietnam, a single dose schedule of measles vaccination for children aged nine months was introduced into the Expanded Program on Immunization (EPI) in 1984 [3]. Initially, the rate of measles vaccination coverage was low but after 1992, the rate has remained above 90% [4]. In 2005, the National EPI set a new goal of measles elimination by 2012 and new strategies were developed [3]. One of these strategies was the implementation of a second routine immunization dose of measles vaccine for children aged 6 years old. The measles immunization coverage rate of the second dose has reached more than 95% since this dose was deployed in 2006 [5].

In Vietnam, after the establishment of the first primary health care policy in the early 1980s' and based on the declaration of Alma-Ata [6], health promotion and prevention has been emphasized in many important resolutions and policies related to health. Health promotion activities have been either integrated into preventive health programs or National Health Target Programs such as EPI, or conducted by specific health promotion programs such as healthy cities, healthy workplaces, and health promoting schools [7].

Health promotion programs have also contributed to the achievement of high levels of measles immunization [3]. For instance; training programs for health staff are implemented annually from province to commune level to ensure sound immunization practice. Additionally, consultation activity is offered to parents on immunization day. Education programs for the community including posters, panels, slogans, and broadcasting are implemented before the immunization day. Poster, panels, and slogans are promoted in schools, commune health centres, hospitals, and crowded areas while media programs are run on television or radio on national and local channels.

In the period approaching the goal of measles elimination in Vietnam by 2012, it is necessary to retain and improve the high levels of measles immunization. This requires the effort of the EPI, the willingness of mothers to immunize their children with measles vaccination and the contribution of health promotion programs.

A previous study suggests the immunization status of children in Vietnam is influenced by factors such as socioeconomic status, hard to reach geographic locations, education and communication on immunization, and the availability of immunization services in the community [8]. Mother's understanding about immunization plays an important role in making decision about immunization for their children. Even though some studies have focused on the knowledge and attitude of mothers towards immunization [9, 10], there is no specific study, which explores mothers' understanding of measles immunization. However, there has not been any study undertaken in Vietnam to find out the relationship between the understanding of mothers about measles immunization and health promotion programs.

This study aims to develop a better understanding of mothers' knowledge, understanding, and attitude towards measles immunization for children and explore the relationship between mothers' understanding and health promotion

programs in North Vietnam. The findings of this study provide insight for improving health promotion programs and closing the gap for 100% measles immunization in North Vietnam.

Methods

Initially, analysis of secondary quantitative data about measles immunization coverage in North Vietnam was undertaken. The results show measles immunization coverage rates of the first (except for 2007) and second doses in the mountainous region were lower than in the plain region (Figure 1 and 2).

Figure 1. Measles immunization coverage rate of the first dose among children aged nine months in plain and mountainous regions of North Vietnam during 2006-2010

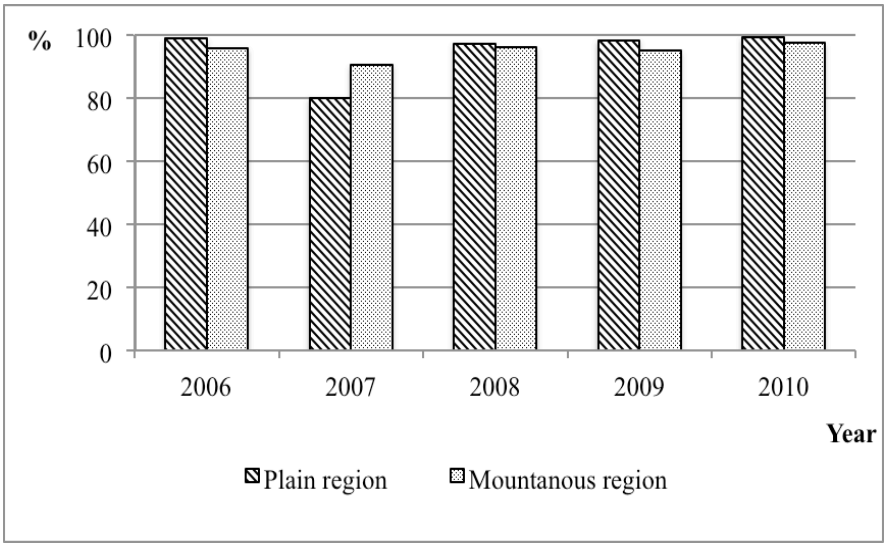
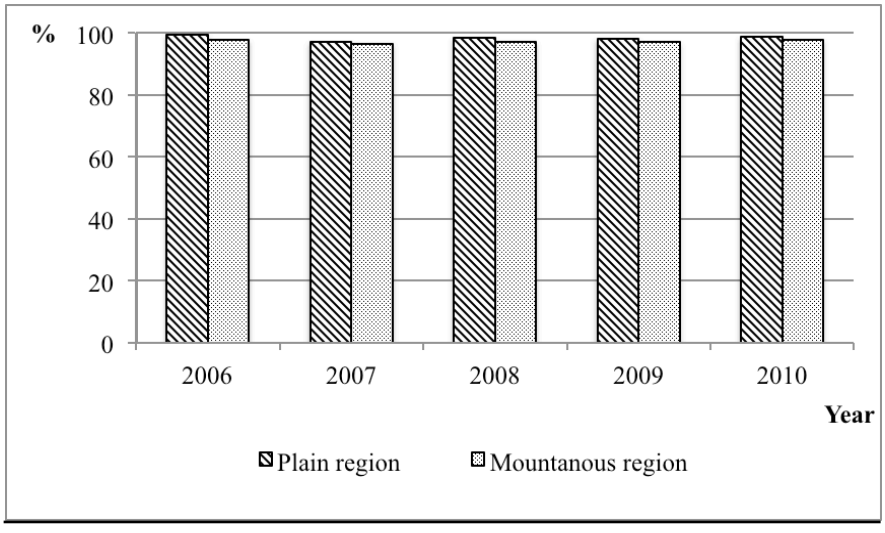


Figure 2. Measles immunization coverage rate of the second dose among children aged six years in plain and mountainous regions of North Vietnam during 2006-2010



The difference in measles immunization coverage between plain and mountainous regions guided the decision to interview mothers about their knowledge, understanding, and attitude towards measles immunization, and health promotion programs. Therefore, Hanoi, a province in the plain region and Lang Son, a province in the mountainous region were chosen to conduct interviews with mothers. Mothers of 1 or 6 year old children between 2006 and 2010 were divided into 2 groups; mothers whose children received the full measles immunization schedule, and mothers whose children received a partial measles immunization schedule or no measles immunizations.

Participants

Following this decision, the researcher discussed the study with managers of the selected commune health centres. After management approval, a list of mothers who met the sample criteria was provided. A voluntary commune health officer visited mothers at home, gave them an information sheet about the research, and asked if they would be willing to participate. Mothers who agreed to participate signed in the consent form. The health officer then negotiated an appropriate time to conduct the interview.

Procedure

Fifteen mothers agreed to participate in the study. This sample size is appropriate for this study because qualitative research aims to uncover insights and gain an understanding of the phenomena of interest. Qualitative research does not use sample size calculations because it does not aim to generalize findings.

All semi-structured interviews took place in the mothers' homes and were audio-recorded. Mothers completed a demographic questionnaire before the interview. The interview schedule consisted of 10 open-ended questions about their knowledge, understanding and attitude towards measles immunization and health promotion programs; the reason why they decided to immunize or not immunize their children, and factors which influence their decisions; the relationship between mother's understanding and health promotion programs about measles immunization, and the effects of health promotion programs on the decision of mothers to immunize their children. Each interview lasted approximately 15 minutes.

Data management and analysis

Ten of fifteen interviews were transcribed in Vietnamese and translated into English before being analysed. The ten transcriptions included five interviews of mothers whose children received the full measles immunization schedule and five interviews of mothers whose children received a partial measles immunization schedule or no measles immunizations. Audio recordings which were not transcribed, were listened to and cross-referenced for congruent themes.

The analysis was performed in several steps in order to structure and categorize the content. The transcribed and translated raw text was read several times to understand it as a whole and to discover essential characters. Reading and re-reading the text line-by-line and open coding was conducted. Units of meaning referring to the same content were identified and coded into topics relevant to the aim of the study. Similar codes were grouped into sub-categories and later merged into main categories. Finally, all categories were unified around a "core" category, which represented the main theme of the research to identify emerging themes. Emerging themes were analysed to identify

recurring themes, their relationship to each other and overt and latent meanings.

Six final themes are described below. Quotes (italics) from the interview transcripts are labelled with the participant's location (province) (LS-Lang Son, and HN-Hanoi), children received the full measles immunization schedule (Y) or did not receive the full measles immunization schedule (N), the participant's number code (01-05), and question number (01-10) (e.g. LSY0104).

Ethics approval

Vietnam National Institute of Hygiene and Epidemiology and Queensland University of Technology Human Research Ethics Committee approved the study. Approval protocol number: 1100000426.

Results

The demographic questionnaire revealed mothers were aged from 27-41 years. All mothers can read and write. Two mothers left after finishing primary school. Three mothers finished high school while five mothers studied secondary school. No mother studied at college or university. Four mothers described themeselves as farmers. Three mothers sell goods at the markets or at home and three others work as tailors.

Mothers' views of measles immunization

Most mothers understood that measles immunization was the best way to prevent children from measles. However, several mothers misunderstood that "*children might be infected by measles disease with mild symptoms even after being immunized with the measles vaccine"* (LSY0302).

Although mothers used measles immunization as a means of prevention, they had varied levels of knowledge about the measles immunization. Mothers whose children received the full measles immunization schedule believed their children needed to get two doses of the measles vaccine: the first dose is at 9 months and the second dose is at 6 years (when children start primary school). Conversely, mothers whose children received a partial measles immunization schedule or no measles immunizations did not know about the measles immunization schedule. These mothers thought children would receive the full immunization schedule at one year of age. This was the reason why the mothers did not immunize their children with the second dose of the measles vaccination. These mothers were identified in mountainous region.

> *"... I think children get the full immunization schedule when they are 1 year old... So, I didn't know they needed one more dose of measles immunization…"* (LSN0204)

However, mothers' understanding about different kind of measles vaccine (Measles-Mumps-Rubella (MMR) vaccine) was another reason for a delay in measles immunization. One mother knew the MMR vaccine prevented her child from measles, mumps, and rubella. Although this vaccine is outside the national immunization program and has to be paid for, some mothers preferred to protect their child with this kind of vaccine, even if they had to wait until it was available.

Mothers' feelings that vaccination was 'good and safe'

Mothers felt the measles immunization was "*good and safe"* (HNN0503) and were satisfied with the measles immunization service provided in the commune health

centres. They expressed belief in the measles immunization because *"immunization helps to prevent diseases or reduce severity…"* (LSY0303).

Some mothers said their children experienced side effects such as mild fever and painfulness after the measles vaccination. However, these side effects did not influence the mothers' belief in measles immunization.

> *"… My child cried and got mild fever. I think this was a normal reaction of her body after being immunized with measles vaccination. So, I was not so worry and I did not talk with the doctors in the commune health centre"* (LYS0402)

Although mothers believed in measles immunization, the side effects of other vaccines influence the decision to immunize children against measles. One mother expressed her "*fear of reaction of hepatitis B vaccination that led to death of a child"* (HNN0505). This fear led to a delay in immunizing her child with measles vaccination. However, this mother still believed in immunizations.

> *"… immunization is good for our children's health. Therefore, I don't mind to immunise them with any vaccines that are good to prevent diseases…"* (HNN0505)

Mothers' reliance on health officers

The health officers at the commune health centers were "*careful and enthusiastic"* (LSY0403). These health officers check children's health before immunizing them. If a child is not well enough to be immunized, the immunization schedule will be delayed. However, health officers educate mothers about the effectiveness of measles immunization and encourage mothers to immunize their children. This is why mothers "*rely on the health officers and follow their directions*" (LSY0102) in relation to measles immunization.

When mothers were asked why they decided to immunize their children with the measles vaccination, they said it was because the health officer asked them. This demonstrates mothers' reliance on health officers at the commune health centres.

Mothers' awareness of health promotion programs

Most mothers recognized health promotion programs as they named and described several programs aimed at improving children and women's health. However, only few mothers understood these programs were health promotion programs. Mothers had different levels of awareness about the health promotion programs.

Mothers whose children were fully immunized with measles vaccination paid more attention to and showed more interest in health promotion programs related to measles immunization. These mothers could describe various health promotion programs in their commune such as "*vitamin supplemental programs, doing exercise and dental care, prenatal care programs, and education programs related to human immunodeficiency virus/ acquired immune deficiency syndrome (HIV/ AIDS) and sexually transmitted diseases (STDs)"* (LSY0406).

They also knew about programs regarding measles immunization from "*doctors in the commune health center, television, local remote speaker, posters and pamphlets"* (LSY0407) and remembered information

about health promotion programs related to measles immunization.

Conversely, mothers whose children did not receive the full measles immunization schedule did not pay much attention to health promotion programs. These mothers could only name a few programs such as "*Vitamin A supplementary programs and prenatal care program for prenant women"* (LSN0206).

These mothers also did not pay attention to health promotion programs related to measles immunization. This was one of the reasons why mothers did not immunize their children with measles vaccination.

> *"...My friends said that there was a program related to measles on the television. However, I was busy with sewing clothes. Thus, I didn't see this program. So I don't know about the second dose of measles vaccination...*" (LSN0207)

However, mothers whose children received a partial measles immunization or no measles immunizations could not remember or repeat any information or slogans from the health promotion programs related to measles immunization. They relied on the health officers at the commune health centres.

> *"I'm so busy with my work. So, I didn't concentrate on that information to remember. Moreover, if I want to know something about health such as immunization, I just need to come to the commune health centre and ask the health officers there. It is more convenient, right?"* (LSN0107)

Mothers repeated the importance of the role of health officers when asked about health promotion programs. This suggests health officers are an important information source in measles immunization and health promotion programs.

Mothers' need for clear information

Mothers perceived health promotion programs were necessary as these provided information and experiences to protect their own and their children's health. The information provided by health promotion programs was "*clear and easy to follow"* (LSY0408).

Mothers felt satisfied with the information, believed in measles immunization and decided to immunize their children with measles vaccination.

> "*… I believe in the information from health officers as well as broadcasted on the television or written on the posters. These help me understand more about diseases and how to prevent them"* (HNN0408)

Mothers' decision under the influence of health promotion programs

The communication program providing information regarding measles and immunization for children help to shape the understanding of the mothers.

> *"These programs provided me with information to consider if I should immunize my children or not"* (HNN0509)

Health promotion programs created a sense of fear about measles and a belief in the measles immunization among these mothers. This was also the reason for mothers' decision to immunize their children.

> *"When I watched the communication programs on the television, in which they showed a clip about children who got measles and its complications, I felt scared and worried for my children's health. Therefore, I decided to immunize my children immediately"* (LSY0309)

Health promotion programs which provide information and experiences about measles immunization influence mothers' understanding, attitude and decision to immunize their children with measles vaccination.

Discussion

The semi-structured interviews with mothers explored their knowledge, understanding, and attitude towards measles immunization, the relationship between their understanding about measles immunization and health promotion programs, and factors influencing their decision to immunize or not to immunize children with measles vaccination. In our study, the education level of mothers does not reflect mothers' understanding about measles immunization. Although mothers have a low level of education (7/10 participants studied secondary school or lower), they knew immunization as a means of protection from measles. These mothers indicate they knew about measles immunization and other health programs from official information sources such as health officers and governmental communication programs. Some mothers said they asked their families and friends for information. However, these mothers used information from official sources to decide to immunize their children.

Although mothers used immunization as a means of protection for their children from disease, their knowledge and understanding about measles immunization is limited. This suggests a lack of knowledge regarding measles immunization leads to an incomplete immunization status of children. Misconceptions and beliefs among the mothers of partially immunized children and a lack of information among mothers of children who were not immunized at all are the main reasons for non-immunization in India [11]. Many mothers attended immunization sessions without knowing exactly which vaccines their children were due to receive [12]. The mothers' vaccine-related knowledge is a predictor of immunization status in the low-coverage zone [12].

Lack of understanding of next immunization appointments is a reason for missing vaccination [13]. The mothers in our study misunderstood that children should receive the full immunization schedule before one year of age. Thus, mothers were not worried about immunization when their children were older than one year. The mothers who misunderstood the immunization schedule were in mountainous region. This suggests future EPI interventions should focus on addressing the misunderstanding of mothers in the mountainous region.

Mothers' positive attitude towards immunization may be an important impetus for the decision to immunize with measles vaccination. We found mothers' feelings of "good and safe" towards measles immunization. The mothers perceived the benefits of and believed in the measles immunization. This positive attitude about immunization has been reported in almost all previous studies from developed and developing countries [11-15]. A study conducted in five European countries including England, Norway, Poland, Spain and Sweden showed parental attitudes to vaccinations in childhood immunization

programs are generally positive. Most parents recognize immunization as a good thing, and a great majority is satisfied with the way in which vaccination was provided [15]. Despite the inadequate knowledge about immunization among mothers in India and Congo, these mothers have strong positive attitude towards immunization [11, 12].

In our study, the mothers' perceived benefits of immunization outweigh the perceived risks of immunization. This is reflected in the positive attitude of mothers towards measles immunization and the decision to immunize children against measles. Parents' attitude is an important predictor of immunization uptake [16]. Parents who expressed a positive attitude towards immunization will immunize their children in the future [15]. However, parents who agree to immunize their children are more likely to be confident about the safety of vaccines compared to parents who disagree to immunize their children [17].

Health officers in the commune health centres played an important role in mothers' decision about measles immunization. Most mothers who are informed about immunization receive information from health officers [18]. In North Vietnam, on immunization day, health officers at the commune health centres ensure mothers receive a consultation related to immunization and children have a health examination. This is the responsibility of health officers in the immunization program [19]. The health officers' strict adherence to process on immunization day helps mothers understand and decide about measles immunization. On immunization day, health officers have limited time to communicate and inform parents of the benefits and risks of immunizations and answer questions [20]. This direct information provides an opportunity to establish trust and improve the physician–patient relationship [17, 21]. A previous study reveals parents are reluctant to initiate discussions during consultations because of the unwillingness of health officers to discuss concerns or dismissive, condescending, or coercive responses to questions [22]. The unwillingness of health officers may be due to limited consultation time. However, our study found the contrary; health officers are diligent and enthusiastic people. The mothers felt satisfied with measles immunization service provided by the health officers and admired the "diligence and enthusiasm" of the health officers. The mothers felt they could ask for information related to immunization from the health officers at anytime.

The communication of health officers contributes to health promotion programs about measles immunization. Health promotion programs have been implemented in Vietnam for many years [6], but people know very little about them. There are no studies which explain mothers' understanding of health promotion programs in general; however, several studies have previously addressed mothers' understanding about specific health promotion programs such as breastfeeding [23] and children's oral health [24]. In addition, a few studies explored the understanding of health promotion generally among health professionals and nurses [25, 26]. These studies showed nurses struggle to describe health promotion and their understanding about health promotion strategies is limited and focuses on the individual. It seems that knowledge regarding health promotion is poor among both mothers and nurses. Our study found mothers have a poor understanding about health promotion programs, especially mothers whose children did not receive the full measles immunization schedule.

Mothers named various health promotion programs aimed at improving women and children's health such as health education, prenatal care program, nutrition programs, and school health programs. However, these mothers did not recognize these health programs as health promotion programs. Mothers seem to be familiar with the concept of *health care programs* rather than health promotion programs. This suggests health promotion interventions should focus on improving mothers' understanding of health promotion programs in order to improve their participation in such programs.

The media is a very strong source of awareness among the mothers about immunization. The important role media can play in promotion of immunization has been highlighted by earlier reports [27-29]. Television-advertising campaigns about immunization has received the highest level of recognition among mothers [29] and helped increase the percentage of measles immunization coverage [27]. Our findings found the three most frequently mentioned sources of communication are television advertisements, local radio and health officers. When mothers are asked to recall information from the communication programs, they mostly remembered information from television programs. Television can be a good source to promote immunization and results of this study point out a need to further utilize this source of communication.

Our findings suggest both positive and negative relationships between mothers' understanding about measles immunization and health promotion programs. Mothers' knowledge and understanding about measles immunization is gained from education and communication. However, mothers whose children received the full measles immunization schedule pay more attention to media programs related to measles immunization, and thus, have a greater understanding about measles immunization than participants whose children did not receive the full measles immunization schedule. Clear messages from health promotion programs and the diligence and enthusiasm of health officers at the commune health centres have helped a positive attitude towards measles immunization. Although the understanding of participants about measles immunization is limited, the positive attitude and belief in health officers are factors leading to mothers' decision to immunize their children. Trusting the health officers and feeling satisfied by the health officers' discussion about vaccines are pivotal for decision-making of mothers about vaccinating children [21]. Mothers want to be entrusted with information from health professionals about vaccine risk – an exchange of trust where mothers want to be regarded as competent decision makers [30].

Limitations

The participants who were selected by the managers of commune health centers could be more concerned and already have a good understanding about immunization. Therefore, these participants could provide knowledgeable answers to the interview's questions. However, participants were selected from two of twenty-eight provinces of North Vietnam, thus the study findings cannot be generalized to the whole Vietnamese population. Recall bias may be a limitation of this study as mothers were asked to recall slogans and health promotion messages without any prompt. In addition, the study did not use a theoretical framework, which is a limitation in understanding the determinants of behavior.

Despite the limitation, our findings are a

valuable contribution to the literature on immunization and health promotion in Vietnam because they explain why some North Vietnamese children have not been received the full measles immunization schedule and explore the relationship between mothers' understanding of measles immunization and health promotion programs. Our findings also suggest further research to explore broadly mothers' knowledge, understanding and attitude towards measles immunization and health promotion program as well as the causation relationship between mothers' understanding about measles immunization and health promotion programs.

Conclusion

The authors conclude North Vietnamese mothers had different levels of knowledge and understanding and a positive attitude about measles immunization. The relationship between mothers' understanding about measles immunization and health promotion programs was explored in both positive and negative aspects. However, mothers' misunderstanding about measles immunization schedule was the main reason for a small proportion of unvaccinated children in North Vietnam. These findings provide insight in the necessary of improving communication with mothers about measles immunization and closing the gap for 100% measles immunization in North Vietnam.

This conclusion is based on the findings from this qualitative study. These findings are not intended to be generalized to other populations and should be considered in the context of other empirical evidence.

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